

REMARKS

This responds to the Office Action mailed on January 24, 2008.

The Detailed Description and claims 1, 27, 32, and 38 are amended. No new matter was added by these amendments. Support for these amendments comes from the Drawings as originally filed, and as exhibited, *e.g.*, at FIG. 1f *et seq.*

§102 Rejection of the Claims

Claims 1-3, 25-29, 31-34 and 37 were rejected under 35 USC § 102(a) as being anticipated by Chung (U.S. 6,288,905). The Applicants respectfully traverse the rejection and request the Office to consider the following.

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” (*Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987), M.P.E.P. §2131, 8th Ed.).

Claim 1 as amended further defines the trace being both physically and electrically in contact with the “microelectronic die active surface”. No new matter is added by this amendment, as the amendment is fully supported in the figures. Claim 1 requires “at least one first conductive trace disposed on said first dielectric material layer and in physical and electrical contact with said microelectronic die active surface” Chung’s trace (metal layer 110) is in physical contact with Chung’s “via conductor 132b” and not with the active surface. Further, Chung’s via conductor 132b is in physical contact with Chung’s “oxidation-resistant material 134b” and not with the active surface. Even further, Chung’s oxidation-resistant material 134b is in physical contact with Chung’s “bump 144” and not with the active surface. It is only Chung’s bump 144 that is in physical contact with Chung’s active surface at the “contact pad 142b”. Applicants respectfully assert the first conductive trace in claim 1 is a single structure with no junctions, as supported by the specification, and as supported by the definition provided by the Office. This accomplishes

at least one first conductive trace disposed on said first dielectric material layer
and in physical and electrical contact with said microelectronic die active surface

(Claim 1).

Because each and every element of claim 1 is not taught by Chung, withdrawal of the rejection is respectfully requested.

Claims 2-4 and 24-25 depend from claim 1 and are therefore also not anticipated.

Regarding claim 26, Chung fails to teach the limitation “encapsulation material includes. . . at least one surface planar to said microelectronic die back surface.” Because each and every element of claim 26 is not taught by Chung, withdrawal of the rejection is respectfully requested. Because claims 27-29 depend from claim 26, withdrawal of their rejections is also respectfully requested.

Regarding claim 31, Chung also fails to teach the encapsulation material is “substantially planar to said plurality of microelectronic dice active devices” (claim 31). This can be verified by review of FIGS. 13 and 14 where the encapsulation material (not present in FIG. 13) would fill to a level above the active surface, and where the encapsulation material (not labeled in FIG. 14) can possibly be construed to be substantially planar to the active surface of die 140 on the left edge, but nowhere else by virtue of the presence of the conductor 160 in that position. Because each and every element of claim 31 is not taught by Chang, withdrawal of the rejection is respectfully requested. Because claims 32-34 and 37 depend from claim 31, withdrawal of their rejections is also respectfully requested.

Claims 1, 26, 27, 31 and 32 were rejected under 35 USC § 102(b) as being anticipated by Fordemwalt et al. (U.S. 3,407,479). The Applicants respectfully traverse the rejection and request the Office to consider the following.

Claim 1 requires “at least one first conductive trace disposed on said first dielectric material layer and in physical and electrical contact with said microelectronic die active surface”

Regarding claim 1, Fordemwalt’s connector fails to teach at least one limitation of claim 1, “wherein said at least one first conductive trace extends adjacent said microelectronic die active surface”. Fordemwalt also fails to teach at least one limitation of claim 1, “wherein said at least one first conductive trace extends . . . adjacent said encapsulation material surface”.

Because each and every element as set forth in claim 1 is not found, either expressly or inherently described, in Fordemwalt, withdrawal of the rejection is respectfully requested.

Regarding claim 26, Fordemwalt fails to teach the limitation “encapsulation material includes. . . at least one surface planar to said microelectronic die back surface.” Because each and every element of claim 26 is not taught by Fordemwalt, withdrawal of the rejection is respectfully requested. Because claim 27 depends from claim 26, withdrawal of its rejection is also respectfully requested.

Regarding claims 31 and 32, Fordemwalt fails to teach at least the limitation “wherein said at least one conductive trace extends adjacent said microelectronic die active surface”. Because each and every element is not found, either expressly or inherently described, in Fordemwalt, withdrawal of the rejection is respectfully requested.

Claims 1, 26 and 27 were also rejected under 35 USC § 102(a) as being anticipated by Nishihara et al. (U.S. 6,013,953). The Applicants respectfully traverse the rejection and request the Office to consider the following.

The Office Action cites to an “encapsulation 18” (Office Action, page 4) that does not exist in Nishihara et al. The only reference to the numeral 18 is with respect to “18 pieces of copper” (Nishihara et al. at col. 7, line 11). The Applicant asks the Office to kindly point out the encapsulation 18 in Nishihara.

The other limitations cited in the Office Action may describe what is disclosed in Nishihara et al., but claim 1 requires “at least one first conductive trace disposed on said first dielectric material layer and in physical and electrical contact with said microelectronic die active surface” Nishihara’s trace (copper through-hole 5) is not disposed on the first dielectric material (adhesive 3) which is on the active surface of the chip 1. Consequently, the limitation of a first dielectric on the active surface and the trace on the first dielectric is not met in Nishihara.

Nishihara’s trace is not in physical contact with the active surface, rather with a “connection terminal 9” that is prominent from the active surface. Because each and every element as set forth in claim 1 is not found, either expressly or inherently described, in Nishihara et al., withdrawal of the rejection is respectfully requested.

Regarding claim 26, Nishihara fails to teach the limitation “encapsulation material includes. . . at least one surface planar to said microelectronic die back surface.” Because each and every element of claim 26 is not taught by Nishihara et al., withdrawal of the rejection is respectfully requested. Because claim 27 depends from claim 26, withdrawal of its rejection is also respectfully requested.

Claims 1, 4, 24, 26, 27, 30-32, 35, 36 and 38-40 were also rejected under 35 USC § 102(b) as being anticipated by Donovan et al. (U.S. 3,343,255).

Claim 1 has the limitation of “wherein said at least one first conductive trace extends adjacent said microelectronic die active surface and adjacent said encapsulation material surface”. This limitation is not taught in Donovan. The Office Action incorrectly refers to a “trace 32” that is an “ohmic contact 32”. The ohmic contact 32 does not have the structural limitation of “wherein said at least one first conductive trace extends adjacent said microelectronic die active surface and adjacent said encapsulation material surface” as claimed. Because each and every element of claim 1 is not taught by Donovan, withdrawal of the rejection is respectfully requested.

Claims 4 and 24 depend from claim 1 and are therefore not anticipated. Further, Donovan fails to teach the limitation of claim 24, particularly the limitation the “said encapsulation material is adjacent at least a portion of said at least one heat dissipation device.” The Office admits this deficiency in Donovan at page 5 of the Office Action. Withdrawal of the rejections is respectfully requested.

Regarding claim 26, Donovan fails to teach the limitation “encapsulation material includes . . . at least one surface planar to said microelectronic die back surface.” Because each and every element of claim 26 is not taught by Donovan, withdrawal of the rejection is respectfully requested. Because claims 27 and 30 depend from claim 26, claims 27 and 30 are also not anticipated and withdrawal of the rejections is also respectfully requested.

Regarding claims 31 and 32, Donovan fails to teach at least the limitation, “at least one first conductive trace disposed on said first dielectric material layer and in physical and electrical contact with said microelectronic die active surface”. Donovan also fails to teach at least the limitation “wherein said at least one first conductive trace extends adjacent said microelectronic

die active surface". Because each and every element is not found, either expressly or inherently described, in Donovan, withdrawal of the rejection is respectfully requested. Because claims 32, 35, and 36 depend from claim 31, withdrawal of their rejections is also respectfully requested.

Regarding claims 38-40, Donovan fails to teach at least the limitation, "at least one first conductive trace disposed on said first dielectric material layer and in physical and electrical contact with said microelectronic die active surface". Donovan also fails to teach at least the limitation "wherein said at least one first conductive trace extends adjacent said microelectronic die active surface". Because each and every element is not found, either expressly or inherently described, in Donovan, withdrawal of the rejection is respectfully requested. Because claims 39, and 40 depend from claim 38, withdrawal of their rejections is also respectfully requested.

§103 Rejection of the Claims

Claims 4, 24, 35 and 36 were rejected under 35 USC § 103(a) as being unpatentable over Chung or Nishihara et al. of Fordemwalt et al. in view of Donovan et al. The Applicants respectfully traverse this rejection and requests the Office to consider the following.

The Applicants incorporate all the discussion regarding the inadequacy of the previously cited references to teach each and every element of what is claimed.

The Office Action admits that Chung or Nishihara or Fordemwalt do not teach a heat dissipation device. However, what teaching Donovan et al. adds to teach a heat dissipation device, does not amount to a teaching or suggestion of all the limitations of claims 4, 24, 35, and 36 as set forth in this Amendment and Reply. Further, where heat dissipation (or heat dissipation at all, for that matter) is not mentioned in Chung and/or Donovan et al., the Office Action has used the Applicants' disclosure as a guide to make the claimed combination. Withdrawal of the rejections is respectfully requested.

RESERVATION OF RIGHTS

In the interest of clarity and brevity, Applicant may not have addressed every assertion made in the Office Action. Applicant's silence regarding any such assertion does not constitute any admission or acquiescence. Applicant reserves all rights not exercised in connection with this reply, such as the right to challenge or rebut any tacit or explicit characterization of any reference or of any of the present claims, the right to challenge or rebut any asserted factual or

legal basis of any of the rejections, the right to swear behind any cited reference such as provided under 37 C.F.R. § 1.131 or otherwise, or the right to assert co-ownership of any cited reference. Applicant does not admit that any of the cited references or any other references of record are relevant to the present claims, or that they constitute prior art. To the extent that any rejection or assertion is based upon the Examiner's personal knowledge, rather than any objective evidence of record as manifested by a cited prior art reference, Applicant timely objects to such reliance on Official Notice, and reserves all rights to request that the Examiner provide a reference or affidavit in support of such assertion, as required by MPEP § 2144.03. Applicant reserves all rights to pursue any cancelled claims in a subsequent patent application claiming the benefit of priority of the present patent application, and to request rejoinder of any withdrawn claim, as required by MPEP § 821.04.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (503) 712-3485 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 50-4238.

Respectfully submitted,

QING MA ET AL.

By their Representatives,
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By /


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